Appendix D
Table 9

Monthly Averages of Water-Quality Parameters for Bighorn River near Hardin, Montana.
From USGS Discrete, Non-Continuous Samples taken at USGS Gage 06294000, throughout the Period 1969-1999

Parameter	January	Febuary	March	April	May	June	July	August	September	October	November	December
# 00010 - TEMPERATURE, WATER (DEG. C)	0.1	0.2	3.4	9.6	14.8	17.8	21.3	20.8	16.7	11.4	3.4	0.5
# 00020 - TEMPERATURE, AIR, DEGREES CELSIUS	-3.4	1.0	5.8	9.7	17.8	21.3	23.7	20.4	18.2	12.5	4.2	-1.9
# 00032 - CLOUD COVER (PERCENT)					80.0	0.0	47.5	0.0	1.7		50.0	
# 00035 - WIND SPEED (MPH)					3.3	5.0	0.8	0.0	0.0		0.0	
# 00060 - DISCHARGE, CUBIC FEET PER SECOND	189.8	314.3	797.6	731.3	808.9	1211.4	315.5	170.6	215.2	211.1	211.3	152.3
# 00061 - DISCHARGE, INSTANTANEOUS, CUBIC FEET PER SECOND	181.0	166.2	328.0	415.9	804.9	793.0	273.9	122.6	123.1	157.2	177.9	157.1
# 00065 - GAGE HEIGHT, FEET	3.3	3.6	2.9	2.7	3.4	3.6	2.7	2.5	2.5	2.6	2.5	3.0
# 00080 - COLOR (PLATINUM-COBALT)	2.5	17.5	16.3	13.7	12.2	9.7	7.5	7.0	4.1	6.7	2.0	2.8
# 00095 - SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C)	754.1	794.9	830.0	956.6	692.9	490.0	636.5	707.7	705.1	695.0	716.9	789.8
# 00400 - PH, WATER, WHOLE, FIELD, STANDARD UNITS	8.1	8.2	8.1	8.2	8.2	8.1	8.3	8.3	8.3	8.1	8.2	8.1
# 00403 - PH, WATER, WHOLE, LABORATORY, STANDARD UNITS	8.3				8.2	8.2	8.2	8.0	8.2		8.4	8.0
# 00405 - CARBON DIOXIDE DISSOLVED (MG/L AS CO2)	4.6	4.1	5.9	5.0	6.4	4.6	2.8	2.0	2.4	5.2	2.8	8.2
# 00410 - ACID NEUTRALIZING CAPACITY (ANC)	238.7	223.5	214.8	231.3	211.4	190.5	198.5	195.7	201.4	211.4	223.6	244.9
# 00440 - ACID NEUTRALIZING CAPACITY (ANC)	288.5	278.2	259.3	278.4	255.1	233.1	240.2	236.4	246.2	257.4	271.0	295.9
# 00445 - ACID NEUTRALIZING CAPACITY (ANC)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.2	0.0	0.0	0.0	0.0
# 00608 - NITROGEN AMMONIA DISSOLVED (MG/L AS N)	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0		0.0	0.0
# 00613 - NITROGEN, NITRITE, DISSOLVED, MG/L AS N	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
# 00618 - NITROGEN NITRATE DISSOLVED (MG/L AS N)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
# 00631 - NITROGEN NITRITE PLUS NITRATE DISSOLVED (MG/L AS N)	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1		
# 00660 - PHOSPHATE ORTHO DISSOLVED (MG/L AS PO4)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
# 00665 - PHOSPHORUS TOTAL (MG/L AS P)	0.0	0.1	0.1	0.1	0.4	0.1	0.1	0.2	0.0			
# 00666 - PHOSPHORUS DISSOLVED (MG/L AS P)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
# 00671 - PHOSPHORUS ORTHOPHOSPHATE DISSOLVED (MG/L AS P)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
# 00900 - HARDNESS TOTAL (MG/L AS CA03)	344.4	330.7	325.9	358.8	306.6	231.2	270.5	281.3	296.3	308.4		
# 00902 - NONCARBONATE HARDNESS WATER WHOLE TOTAL, FIELD, (MG/L AS CACO3)	104.6	108.0	110.8	127.1	95.1	40.8	72.0	87.1	94.0	97.1		
# 00915 - CALCIUM DISSOLVED (MG/L AS CA)	75.4	76.7	68.5	71.2	65.2	55.6	59.1	57.9	61.1	64.3		
# 00925 - MAGNESIUM DISSOLVED (MG/L AS MG)	36.9	34.0	37.6	44.0	33.0	21.8	31.2	34.1	34.5	35.9		
# 00930 - SODIUM DISSOLVED (MG/L AS NA)	48.6	54.8	74.2	88.6	51.7	20.4	40.2	45.8	45.8	45.5		
# 00931 - SODIUM ADSORPTION RATIO	1.2	1.3	1.8	2.0	1.3	0.6	1.0	1.2	1.1	1.1		
# 00932 - SODIUM, PERCENT	23.6	26.3	32.7	34.1	26.0	16.0	22.1	24.9	24.5	23.9		

Appendix D
Table 9

Monthly Averages of Water-Quality Parameters for Bighorn River near Hardin, Montana.
From USGS Discrete, Non-Continuous Samples taken at USGS Gage 06294000, throughout the Period 1969-1999

Parameter	January	Febuary	March	April	May	June	July	August	September	October	November	December
# 00933 - SODIUM PLUS POTASSIUM DISSOLVED (MG/L AS NA)						35.0	52.0	61.0	70.0	52.0		
# 00935 - POTASSIUM DISSOLVED (MG/L AS K)	3.4	3.7	4.1	4.1	3.1	1.7	2.8	3.0	2.6	2.7		
# 00940 - CHLORIDE DISSOLVED (MG/L AS CL)	3.6	4.0	4.6	5.3	3.3	1.8	3.3	3.7	3.7	3.2		
# 00945 - SULFATE DISSOLVED (MG/L AS SO4)	203.6	213.6	262.8	308.1	190.7	83.0	160.4	186.4	191.4	189.8		
# 00950 - FLUORIDE DISSOLVED (MG/L AS F)	0.2	0.3	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2		
# 00955 - SILICA DISSOLVED (MG/L AS SIO2)	8.8	8.5	7.9	8.7	7.8	6.7	6.6	6.2	6.4	6.9		

Appendix D
Table 10
Monthly Averages of Water-Quality Parameters for Tongue River at Stateline, from USGS Discrete, Non-Continuous Samples taken at USGS Gage 06306300, throughout the Period 1985-1999

Parameter	January	Febuary	March	April	May	June	July	August	September	October	November	December
# 00010 - TEMPERATURE, WATER (DEG. C)	0.0	0.0	5.5	8.6	13.1	16.0	21.8	20.3	15.1	10.6	2.8	0.5
# 00020 - TEMPERATURE, AIR, DEGREES CELSIUS	2.6	6.8	8.9	10.4	16.8	19.9	26.6	23.5	20.6	12.7	4.8	1.8
# 00025 - BAROMETRIC PRESSURE (MM OF HG)	663.0	670.0	680.0		670.4	674.0	669.0	679.0	671.0		670.5	670.5
# 00032 - CLOUD COVER (PERCENT)					48.6	66.7	0.0	40.0	23.3		27.5	100.0
# 00035 - WIND SPEED (MPH)					0.6	3.3	5.0	5.0	5.0		3.5	
# 00061 - DISCHARGE, INSTANTANEOUS, CUBIC FEET PER SECOND	176.6	211.5	264.8	326.4	1338.4	1721.9	323.5	207.7	243.9	240.3	238.1	154.5
# 00065 - GAGE HEIGHT, FEET	3.3	3.7	2.9	3.0	4.6	5.4	3.2	2.9	2.9	2.9	2.9	3.0
# 00095 - SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C)	683.9	654.7	767.5	698.4	299.4	292.9	546.4	698.8	611.7	655.3	625.7	685.2
# 00300 - OXYGEN DISSOLVED (MG/L)	13.1		11.8		8.7	8.5	7.5	9.3	9.6		13.4	11.8
# 00400 - PH, WATER, WHOLE, FIELD, STANDARD UNITS	8.3	8.3	8.2		8.0	8.4	8.3	8.2	8.4		8.5	8.4
# 00403 - PH, WATER, WHOLE, LABORATORY, STANDARD UNITS	8.2	8.0			7.9	8.0	8.1	8.1	8.4		8.2	8.1
# 00452 - CARBONATE, WATER, DISSOLVED, INCREMENTAL TITRATION, FIELD, MG/L AS CO3									6.0			
# 00453 - BICARBONATE, WATER, DISSOLVED, INCREMENTAL TITRATION, FIELD, MG/L AS HCO3									243.0			
# 00600 - NITROGEN TOTAL (MG/L AS N)												1.0
# 00605 - NITROGEN ORGANIC TOTAL (MG/L AS N)											0.4	0.4
# 00610 - NITROGEN AMMONIA TOTAL (MG/L AS N)			0.1		0.0	0.0	0.0	0.1	0.0		0.0	0.1
# 00625 - NITROGEN AMMONIA PLUS ORGANIC TOTAL (MG/L AS N)			0.5		0.7	0.6	0.7	0.2	0.8		0.6	0.4
# 00630 - NITROGEN NITRITE PLUS NITRATE TOTAL (MG/L AS N)			0.3		0.1	0.1	0.1	0.1	0.1		0.2	0.2
# 00631 - NITROGEN NITRITE PLUS NITRATE DISSOLVED (MG/L AS N)					0.1							0.6
# 00665 - PHOSPHORUS TOTAL (MG/L AS P)			0.1		0.2	0.1	0.0	0.1	0.0		0.1	0.1
# 00670 - PHOSPHORUS ORGANIC TOTAL (MG/L AS P)			0.1		0.1		0.0					0.1
# 00915 - CALCIUM DISSOLVED (MG/L AS CA)	66.0	61.0			25.7	33.2	44.0	66.0	58.0		63.5	71.0
# 00925 - MAGNESIUM DISSOLVED (MG/L AS MG)	34.0	37.0			10.3	15.6	22.0	43.3	34.0		41.0	45.0
# 00930 - SODIUM DISSOLVED (MG/L AS NA)	20.0	26.0			6.9	10.9	15.0	34.0	21.5		30.5	29.0
# 00935 - POTASSIUM DISSOLVED (MG/L AS K)	2.1	5.1			1.3	1.7	1.8	4.4	2.6		3.0	2.0
# 00940 - CHLORIDE DISSOLVED (MG/L AS CL)	2.8	4.2			1.5	1.4	2.1	4.2	3.4		3.4	3.3
# 00945 - SULFATE DISSOLVED (MG/L AS SO4)	110.0	140.0			30.0	48.8	66.0	180.0	115.0		160.0	160.0
# 00950 - FLUORIDE DISSOLVED (MG/L AS F)	0.2	0.2			0.1	0.1	0.2	0.2	0.2		0.2	0.3

Appendix D
Table 10
Monthly Averages of Water-Quality Parameters for Tongue River at Stateline, from USGS Discrete, Non-Continuous Samples taken at USGS Gage 06306300, throughout the Period 1985-1999

Parameter	January	Febuary	March	April	May	June	July	August	September	October	November	December
# 00955 - SILICA DISSOLVED (MG/L AS SIO2)	7.2	10.0			7.9	7.1	7.6	7.3	5.6		4.6	8.8
# 01000 - ARSENIC DISSOLVED (UG/L AS AS)			1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0
# 01005 - BARIUM DISSOLVED (UG/L AS BA)			100.0		53.0	45.0	63.0	53.0	45.3		53.0	88.0
# 01010 - BERYLLIUM DISSOLVED (UG/L AS BE)					0.5	0.5		0.5	0.6			
# 01020 - BORON DISSOLVED (UG/L AS B)					23.3	50.0		95.0	70.0			
# 01025 - CADMIUM DISSOLVED (UG/L AS CD)			1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.5
# 01030 - CHROMIUM DISSOLVED (UG/L AS CR)			1.0		1.2	1.0	1.0	1.3	1.0		1.0	1.0
# 01035 - COBALT DISSOLVED (UG/L AS CO)					3.0	3.0		3.0	3.0			
# 01040 - COPPER DISSOLVED (UG/L AS CU)					2.0	2.0		1.5	1.5			
# 01046 - IRON DISSOLVED (UG/L AS FE)			20.0		49.6	15.0	5.5	10.0	7.0		6.0	95.0
# 01049 - LEAD DISSOLVED (UG/L AS PB)			5.0		2.3	1.0	5.0	2.3	2.3		3.0	3.5
# 01056 - MANGANESE DISSOLVED (UG/L AS MN)					8.0	6.0		8.5	7.0			
# 01075 - SILVER DISSOLVED (UG/L AS AG)			1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0
# 01080 - STRONTIUM DISSOLVED (UG/L AS SR)					113.0	280.0		540.0	420.0			
# 01090 - ZINC DISSOLVED (UG/L AS ZN)					5.3	4.0		3.0	5.5			
# 01106 - ALUMINUM DISSOLVED (UG/L AS AL)					100.0	10.0		10.0	10.0			
# 01130 - LITHIUM DISSOLVED (UG/L AS LI)					5.0	13.0		19.5	19.0			
# 01145 - SELENIUM DISSOLVED (UG/L AS SE)			1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0
# 31625 - FECAL COLIFORM .7 UM-MF (COL./ 100 ML)			2.0		165.0		86.5	290.0	77.0		5.5	18.0
# 39036 - ALKALINITY, WATER, DISSOLVED, FIXED ENDPOINT, FIELD, AS CACO3, MG/L									206.0			
# 39086 - ALKALINITY, WATER, DISSOLVED, TOTAL, INCREMENTAL TITRATION, FIELD, MG/L AS CACO3									210.0			
# 39720 - PICLORAM, WATER, UNFILTERED, RECOVERABLE, UG/L						0.0	0.0	0.0	0.0			
# 39730 - 2,4-D, TOTAL (UG/L)						0.0	0.0	0.0	0.0			
# 39740 - 2,4,5-T, TOTAL (UG/L)						0.0	0.0	0.0	0.0			
# 39760 - SILVEX, TOTAL (UG/L)						0.0	0.0	0.0	0.0			
# 71886 - PHOSPHORUS TOTAL (MG/L AS PO4)											0.2	0.2
# 71887 - NITROGEN, TOTAL (MG/L AS NO3)			3.5									4.4
# 71890 - MERCURY, DISSOLVED (UG/L AS HG)			0.1		0.2	0.1	0.1	0.2	0.1		0.1	0.2
# 82052 - DICAMBA, TOTAL (UG/L)						0.0	0.0	0.0	0.0			
# 82183 - 2,4-DP TOTAL (UG/L)						0.0	0.0	0.0	0.0			
# 90410 - ACID NEUTRALIZING CAPACITY (ANC)	230.0	223.0			93.8	121.6	160.0	237.3	213.5		234.0	250.0

Appendix D
Table 12
Monthly Averages of Water-Quality Parameters for Otter Creek, near Ashland, Montana,.
From USGS Discrete, Non-Continuous Samples taken at USGS Gage 6307740, throughout the Period 1974-1995

Parameter	January	Febuary	March	April	May	June	July	August	September	October	November	December
# 00010 - TEMPERATURE, WATER (DEG. C)	0.1	0.1	2.4	8.6	14.2	21.0	23.4	22.0	15.9	9.0	3.2	0.2
# 00020 - TEMPERATURE, AIR, DEGREES CELSIUS	-2.5	-0.8	7.8	9.6	17.9	23.2	27.1	24.0	19.2	12.1	8.0	-3.6
# 00025 - BAROMETRIC PRESSURE (MM OF HG)	683.5	680.7	676.0	685.4	684.0	682.5	686.2	684.3	691.5	685.0	684.2	683.0
# 00032 - CLOUD COVER (PERCENT)	100.0	33.3	60.0	36.0	37.5	33.0	12.5	28.0	75.0	32.0	35.0	0.0
# 00035 - WIND SPEED (MPH)	1.0	7.7	5.0	2.8	1.2	2.5	1.2	1.2	5.0	0.2	3.8	1.7
# 00060 - DISCHARGE, CUBIC FEET PER SECOND									0.3			
# 00061 - DISCHARGE, INSTANTANEOUS, CUBIC FEET PER SECOND	9.7	4.5	47.7	6.2	28.8	4.6	1.8	1.1	1.1	1.0	2.4	2.7
# 00065 - GAGE HEIGHT, FEET	3.4	3.1	3.8	3.5	3.0	3.0	2.8	2.6	2.8	3.1	2.8	3.4
# 00070 - TURBIDITY (JACKSON CANDLE UNITS)	23.8	14.0	96.5	20.2	53.4	24.5	21.7	32.0	15.8	9.0	22.3	7.8
# 00095 - SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C)	2792.9	2629.2	1781.4	2854.0	2968.8	3058.1	2805.7	2836.7	2773.6	2605.0	2730.8	3180.7
# 00300 - OXYGEN DISSOLVED (MG/L)	11.8	11.4	12.2	11.0	8.1	6.8	6.4	5.9	9.3	8.8	11.7	12.1
# 00301 - OXYGEN DISSOLVED (% OF SATURATION)	86.4	84.5	94.6	96.1	91.4	80.1	93.8	68.8	96.3	84.1	96.0	92.6
# 00310 - BIOCHEMICAL OXYGEN DEMAND, 5-DAY AT 20 DEGREES CELSIUS (MG/L)	3.0	1.8	4.3	2.5	2.7	2.1	2.3	2.0	1.5	2.1	1.2	0.9
# 00400 - PH, WATER, WHOLE, FIELD, STANDARD UNITS	8.2	8.1	8.1	8.4	8.3	8.3	8.4	8.4	8.5	8.4	8.5	8.2
# 00403 - PH, WATER, WHOLE, LABORATORY, STANDARD UNITS	8.0	8.0	8.3	8.4	8.2	8.2	8.3	8.3	8.5	8.4	8.4	8.2
# 00405 - CARBON DIOXIDE DISSOLVED (MG/L AS CO2)	9.2	12.5	6.9	7.0	7.3	5.0	5.1	4.0	3.4	5.5	4.7	7.1
# 00410 - ACID NEUTRALIZING CAPACITY (ANC), CACO3	567.9	542.9	299.4	488.4	481.6	462.6	526.1	546.2	509.1	542.4	539.0	611.6
# 00440 - ACID NEUTRALIZING CAPACITY (ANC), HCO3	598.5	616.5	351.0	549.2	513.2	544.2	611.0	678.7	566.2	672.0	644.7	737.2
# 00445 - ACID NEUTRALIZING CAPACITY (ANC), WATER, UNFILTERED, CARBONATE	0.0	2.2	0.0	9.0	0.0	10.0	9.0	10.7	34.2	0.8	4.3	0.0
# 00515 - RESIDUE, TOTAL FILTERABLE, DRIED AT 105 DEGREES CELSIUS (MG/L)											2650.0	2600.0
# 00530 - RESIDUE, TOTAL NON FILTERABLE (MG/L)											4.0	35.0
# 00600 - NITROGEN TOTAL (MG/L AS N)	1.7	1.4	2.2	0.9	1.4	1.7	1.3	1.3	1.1	0.8	1.0	0.9
# 00605 - NITROGEN ORGANIC TOTAL (MG/L AS N)	1.0	0.6	1.5	0.7	1.1	1.6	1.2	1.3	1.0	0.8	0.8	0.5
# 00608 - NITROGEN AMMONIA DISSOLVED (MG/L AS N)	0.0			0.0		0.0	0.0	0.0		0.0		
# 00610 - NITROGEN AMMONIA TOTAL (MG/L AS N)	0.2	0.1	0.3	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.1
# 00613 - NITROGEN, NITRITE, DISSOLVED, MG/L AS N	0.0			0.0		0.0	0.0	0.0		0.0		
# 00615 - NITROGEN, NITRITE, TOTAL, MG/L AS N	0.0		0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.1
# 00618 - NITROGEN NITRATE DISSOLVED (MG/L AS N)	0.1					0.0	0.0			0.4		
# 00625 - NITROGEN AMMONIA PLUS ORGANIC TOTAL (MG/L AS N)	0.9	0.8	1.5	1.0	1.1	1.2	1.1	1.2	1.0	0.8	0.9	0.6
# 00630 - NITROGEN NITRITE PLUS NITRATE TOTAL (MG/L AS N)	0.5	0.6	0.3	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.2	0.4
# 00631 - NITROGEN NITRITE PLUS NITRATE DISSOLVED (MG/L AS N)	0.2			0.0		0.0	0.1	0.0		0.2		
# 00650 - PHOSPHATE TOTAL (MG/L AS PO4)						0.3	0.2					
# 00665 - PHOSPHORUS TOTAL (MG/L AS P)	0.0	0.0	0.2	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0

Appendix D
Table 12
Monthly Averages of Water-Quality Parameters for Otter Creek, near Ashland, Montana,.
From USGS Discrete, Non-Continuous Samples taken at USGS Gage 6307740, throughout the Period 1974-1995

Parameter	January	Febuary	March	April	May	June	July	August	September	October	November	December
# 00671 - PHOSPHORUS ORTHOPHOSPHATE DISSOLVED (MG/L AS P)	0.0			0.0		0.0	0.0	0.0		0.0		
# 00681 - CARBON ORGANIC DISSOLVED (MG/L AS C)	11.0	11.0	7.2	8.4	10.4	8.5	11.5	10.0	11.2	10.1	7.0	6.8
# 00689 - CARBON, ORGANIC, PARTICULATE, TOTAL, MILLIGRAMS PER LITER	0.2	0.8	0.6	0.1	1.4	1.1	0.4	0.5	0.7	1.1	0.4	0.3
# 00900 - HARDNESS TOTAL (MG/L AS CA03)	895.7	908.3	507.1	901.2	863.3	895.7	877.1	865.0	777.5	796.7	870.0	1025.7
# 00902 - NONCARBONATE HARDNESS WATER WHOLE TOTAL, FIELD	359.9	383.3	211.9	422.9	391.1	432.9	357.1	322.5	274.3	256.2	345.0	412.9
# 00915 - CALCIUM DISSOLVED (MG/L AS CA)	96.3	96.3	67.1	91.6	86.2	76.9	65.6	70.8	61.5	69.3	75.8	100.5
# 00925 - MAGNESIUM DISSOLVED (MG/L AS MG)	145.4	146.1	94.0	157.7	155.2	178.8	161.4	155.0	149.2	144.7	150.0	183.6
# 00930 - SODIUM DISSOLVED (MG/L AS NA)	346.7	335.6	223.7	373.8	388.5	425.6	394.6	403.0	384.2	370.7	368.9	431.8
# 00931 - SODIUM ADSORPTION RATIO	5.0	5.2	3.7	5.4	5.4	5.9	6.1	5.8	5.8	5.8	5.9	5.9
# 00932 - SODIUM, PERCENT	44.1	45.7	43.9	47.0	47.2	49.1	49.9	49.0	49.9	49.9	49.0	47.1
# 00933 - SODIUM PLUS POTASSIUM DISSOLVED (MG/L AS NA)	490.0		290.0		480.0	460.0	430.0		360.0	530.0		470.0
# 00935 - POTASSIUM DISSOLVED (MG/L AS K)	17.0	16.9	14.1	16.7	16.6	17.5	18.4	19.1	22.1	20.2	19.3	20.7
# 00940 - CHLORIDE DISSOLVED (MG/L AS CL)	12.9	12.3	8.9	11.9	13.8	16.2	14.3	16.2	21.6	15.1	13.2	14.5
# 00945 - SULFATE DISSOLVED (MG/L AS SO4)	1075.8	1036.7	708.9	1143.1	1167.5	1286.9	1139.2	1100.0	1050.8	972.0	1046.7	1289.1
# 00950 - FLUORIDE DISSOLVED (MG/L AS F)	0.7	0.7	0.5	0.7	0.7	0.8	0.8	0.9	0.8	0.8	0.8	0.8
# 00955 - SILICA DISSOLVED (MG/L AS SIO2)	16.6	16.2	8.8	6.6	6.2	5.7	7.5	11.9	7.2	8.5	8.4	13.4
# 01000 - ARSENIC DISSOLVED (UG/L AS AS)	1.0	2.0	1.0	1.2	2.0	1.8	3.3	4.2	2.0	2.0	1.5	1.0
# 01001 - ARSENIC SUSPENDED TOTAL (UG/L AS AS)				1.0	0.0	1.0			0.3			
# 01002 - ARSENIC TOTAL (UG/L AS AS)	1.3		1.0	1.2	1.5	1.8	4.0		2.3	1.5	1.5	1.0
# 01005 - BARIUM DISSOLVED (UG/L AS BA)											20.0	30.0
# 01010 - BERYLLIUM DISSOLVED (UG/L AS BE)	10.0	10.0	10.0	7.4	7.5	10.0	8.4	10.0	8.0	15.0	10.0	10.0
# 01011 - BERYLLIUM SUSPENDED RECOVERABLE (UG/L AS BE)				10.0	0.0				0.0			
# 01012 - BERYLLIUM TOTAL (UG/L AS BE)	10.0		10.0	10.0	7.5	10.0	10.0		6.7	10.0	10.0	10.0
# 01015 - BISMUTH DISSOLVED (UG/L AS BI)											11.0	14.0
# 01020 - BORON DISSOLVED (UG/L AS B)	406.7	392.2	243.3	401.5	460.0	526.9	528.5	570.0	557.5	544.0	490.0	497.3
# 01025 - CADMIUM DISSOLVED (UG/L AS CD)	2.0	4.0	1.0	1.2	1.2	1.0	1.3	1.0	0.6	1.3	1.0	50.0
# 01026 - CADMIUM SUSPENDED (UG/L AS CD)				0.0	0.0				0.0			
# 01027 - CADMIUM TOTAL (UG/L AS CD)	20.0		1.0	7.5	0.8	4.2	20.0		0.3	13.7	20.0	20.0
# 01030 - CHROMIUM DISSOLVED (UG/L AS CR)	0.0	20.0	10.0	6.8	3.2	2.8	2.3	4.6	6.4	20.0	0.0	20.0
# 01031 - CHROMIUM SUSPENDED (UG/L AS CR)				0.0	0.0	0.0			5.0			
# 01034 - CHROMIUM TOTAL (UG/L AS CR)	0.0		30.0	6.8	3.2	2.8	20.0		13.3	45.0	7.5	20.0
# 01035 - COBALT DISSOLVED (UG/L AS CO)											10.0	14.0
# 01040 - COPPER DISSOLVED (UG/L AS CU)	2.0	3.0	3.0	1.2	1.2	1.4	2.2	2.8	1.2	2.0	1.0	20.0
# 01041 - COPPER SUSPENDED (UG/L AS CU)			4.0	2.0	5.0	2.0			2.3			
# 01042 - COPPER TOTAL (UG/L AS CU)	23.3		7.0	9.7	5.5	7.2	20.0		3.7	10.0	20.0	110.0
# 01044 - IRON SUSPENDED (UG/L AS FE)			650.0	450.0	1150.0	1200.0			483.3			
# 01045 - IRON, TOTAL, (UG/L AS FE)	1436.7		700.0	763.3	1227.5	1425.0	1300.0		510.0	500.0	325.0	620.0

Appendix D
Table 12
Monthly Averages of Water-Quality Parameters for Otter Creek, near Ashland, Montana,.
From USGS Discrete, Non-Continuous Samples taken at USGS Gage 6307740, throughout the Period 1974-1995

Parameter	January	Febuary	March	April	May	June	July	August	September	October	November	December
# 01046 - IRON DISSOLVED (UG/L AS FE)	54.2	66.6	119.1	38.0	34.6	46.9	31.5	37.0	35.8	42.0	31.1	38.2
# 01049 - LEAD DISSOLVED (UG/L AS PB)	5.0	16.0	4.0	2.3	1.2	2.8	4.5	3.4	0.6	5.7	2.0	14.0
# 01050 - LEAD SUSPENDED (UG/L AS PB)			0.0	0.0	4.0	0.0			5.0			
# 01051 - LEAD TOTAL (UG/L AS PB)	200.0		4.0	70.7	3.2	36.3	200.0		3.7	134.0	200.0	200.0
# 01054 - MANGANESE SUSPENDED (UG/L AS MN)			30.0	70.0	100.0	120.0			46.7	30.0		
# 01055 - MANGANESE TOTAL (UG/L AS MN)	83.3		110.0	230.0	147.5	151.7	120.0		70.0	73.3	45.0	50.0
# 01056 - MANGANESE DISSOLVED (UG/L AS MN)	60.0	90.0	80.0	138.3	47.5	42.0	31.3	32.0	20.0	18.0	25.0	30.0
# 01060 - MOLYBDENUM DISSOLVED (UG/L AS MO)	4.0	4.0		4.0			5.0			3.5	4.5	6.0
# 01062 - MOLYBDENUM TOTAL (UG/L AS MO)	3.0			4.0		5.0	2.0			8.0	5.0	5.0
# 01065 - NICKEL DISSOLVED (UG/L AS NI)	3.0	0.0	2.0	4.2	4.2	4.8	3.5	4.4	2.8	5.0	3.5	14.0
# 01066 - NICKEL SUSPENDED (UG/L AS NI)			5.0	0.0	5.5	0.0			10.0			
# 01067 - NICKEL TOTAL (UG/L AS NI)	33.3		7.0	20.8	8.0	14.2	50.0		12.7	50.0	50.0	50.0
# 01075 - SILVER DISSOLVED (UG/L AS AG)											2.0	2.0
# 01080 - STRONTIUM DISSOLVED (UG/L AS SR)											1100.0	1800.0
# 01085 - VANADIUM DISSOLVED (UG/L AS V)	0.7	1.0		0.6			0.0			1.8	1.0	10.0
# 01090 - ZINC DISSOLVED (UG/L AS ZN)	20.0	20.0	10.0	15.5	12.5	10.0	12.2	10.0	16.0	10.0	20.0	110.0
# 01091 - ZINC SUSPENDED (UG/L AS ZN)				10.0	15.0	30.0			63.3			
# 01092 - ZINC TOTAL (UG/L AS ZN)	20.0		20.0	34.0	22.5	20.0	20.0		73.3	30.0	20.0	
# 01100 - TIN DISSOLVED (UG/L AS SN)											11.0	14.0
# 01105 - ALUMINUM, TOTAL (UG/L AS AL)	220.0			450.0		780.0	710.0			230.0	160.0	
# 01106 - ALUMINUM DISSOLVED (UG/L AS AL)	30.0	100.0		60.0			100.0			65.0	100.0	100.0
# 01120 - GALLIUM DISSOLVED (UG/L AS GA)											5.0	6.0
# 01125 - GERMANIUM DISSOLVED (UG/L AS GE)											20.0	14.0
# 01130 - LITHIUM DISSOLVED (UG/L AS LI)	150.0	140.0		100.0			140.0			125.0	130.0	150.0
# 01132 - LITHIUM TOTAL (UG/L AS LI)	100.0			100.0		120.0	140.0			130.0	145.0	140.0
# 01145 - SELENIUM DISSOLVED (UG/L AS SE)	1.0	1.0	1.0	1.0	0.8	1.0	1.0	1.0	1.0	1.0	1.5	
# 01146 - SELENIUM SUSPENDED (UG/L AS SE)				0.0	0.5	0.0			0.0			
# 01147 - SELENIUM TOTAL (UG/L AS SE)	1.3		1.0	1.3	1.2	1.0	1.0		1.0	1.0	1.5	2.0
# 01150 - TITANIUM DISSOLVED (UG/L AS TI)											8.0	10.0
# 01160 - ZIRCONIUM DISSOLVED (UG/L AS ZR)											20.0	22.0
# 03515 - GROSS BETA DISSOLVED (PCI/L AS CS-137)											42.0	25.0
# 03516 - GROSS BETA SUSPENDED (PCI/L AS CS-137)											3.9	4.7
# 09511 - RADIUM 226 DISSOLVED, RADON METHOD (PCI/L)											0.1	0.0
# 22703 - URANIUM, NATURAL, WATER, DISSOLVED, UG/L											12.0	10.0
# 70301 - SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	2115.7	2121.7	1189.9	2182.5	2077.9	2235.7	2220.0	2127.5	1992.5	2021.2	2130.0	2428.6
# 70302 - SOLIDS, DISSOLVED (TONS PER DAY)	32.6	31.6	106.2	52.4	175.8	48.8	12.7	14.1	7.4	7.8	18.5	29.2
# 70303 - SOLIDS, DISSOLVED (TONS PER ACRE-FOOT)	2.9	2.9	1.6	3.0	2.8	3.0	3.0	2.9	2.7	2.7	2.9	3.3
# 70331 - SEDIMENT, SUSPENDED, SIEVE DIAMETER, PERCENT FINER THAN .062 MM	77.2	86.0	90.2	87.2	94.3	87.2	90.5	90.1	91.5	82.6	76.0	75.8

Appendix D
Table 12
Monthly Averages of Water-Quality Parameters for Otter Creek, near Ashland, Montana,.
From USGS Discrete, Non-Continuous Samples taken at USGS Gage 6307740, throughout the Period 1974-1995

Parameter	January	Febuary	March	April	May	June	July	August	September	October	November	December
# 70507 - PHOSPHORUS ORTHOPHOSPHATE, TOTAL (MG/L AS P)	0.0		0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0
# 71845 - NITROGEN, AMMONIA, TOTAL (MG/L AS NH4)	0.1	0.0	0.0	0.2	0.0	0.1	0.0		0.0	0.0	0.0	0.0
# 71865 - IODIDE, DISSOLVED (MG/L AS I)		0.0		0.0					0.0	0.0		
# 71870 - BROMIDE, DISSOLVED (MG/L AS BR)		0.1		0.1					0.0	0.1		
# 71886 - PHOSPHORUS TOTAL (MG/L AS PO4)	0.1	0.1	0.1	0.2	0.3	0.3	0.3	0.3	0.1	0.1	0.2	0.1
# 71887 - NITROGEN, TOTAL (MG/L AS NO3)	7.4	6.0	9.8	3.8	6.1	7.3	5.6	6.0	5.0	3.7	4.6	4.2
# 71890 - MERCURY, DISSOLVED (UG/L AS HG)	0.5	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.3	0.5	0.1
# 71895 - MERCURY, SUSPENDED HG)RECOVERABLE (UG/L AS HG)			0.1	0.0	0.0				0.0			
# 71900 - MERCURY, TOTAL RECOVERABLE (UG/L AS HG)	0.5		0.2	0.2	0.2	0.3	0.5		0.2	0.6	0.5	0.1
# 80010 - URANIUM, DISSOLVED, DIRECT FLUOROMETRIC (PCI/L)											10.0	
# 80030 - ALPHA, GROSS, DISSOLVED AS U NATURAL (UG/L)											34.5	30.0
# 80040 - GROSS ALPHA RADIOACTIVITY, SUSPENDED TOTAL (UG/L AS U NATURAL)											0.4	0.5
# 80050 - BETA, GROSS, DISSOLVED AS STRONTIUM/YTTRIUM-90 (PCI/L)											33.5	22.0
# 80060 - GROSS BETA RADIOACTIVITY, SUSPENDED TOTAL (PCI/L AS SR/Y-90)											3.6	3.8
# 80154 - SEDIMENT, SUSPENDED CONCENTRATION (MG/L)	70.6	58.2	146.1	65.6	144.9	142.8	134.3	149.9	62.0	51.6	56.1	61.3
# 80155 - SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY)	2.3	0.8	84.3	1.2	48.7	2.4	0.6	0.5	0.2	0.1	0.6	0.6
# 82068 - POTASSIUM 40 DISSOLVED(PCI /L AS K40)	13.0	12.0		13.0	2.6	1.0	16.0			17.0	14.0	
# 82398 - SAMPLING METHOD (CODES)	15.0	10.0	10.0	10.0	20.0	18.0	30.0	16.7	40.0	40.0	40.0	20.0
# 90095 - SPECIFIC CONDUCTANCE MICROSIEMENS/CM AT 25 DEG C	2757.1	2495.0	2243.3	2777.1	3006.7	3137.0	2747.5	2797.1	2663.3	2524.4	2603.3	3017.5
# 90410 - ACID NEUTRALIZING CAPACITY (ANC), WATER, CACO3	556.9	469.5	420.7	432.0	532.3	555.0	529.1	561.0	542.2	547.9	524.0	580.2
# 95902 - HARDNESS, NONCARBONATE, AS CACO3, MG/L	300.0		200.0	350.0	445.0	390.0	335.0	380.0	225.0	190.0		240.0

Appendix D
Table 13
Monthly Averages of Water-Quality Parameters for Hanging Woman Creek, near Birney, MT.
From USGS Discrete, Non-Continuous Samples, taken from USGS, throughout the Period of 1974-1995

Parameter	January	Febuary	March	April	May	June	July	August	September	October	November	December
# 00010 - TEMPERATURE, WATER (DEG. C)	0.1	0.3	3.1	9.7	15.6	20.1	22.3	20.4	14.5	10.8	2.9	0.1
# 00020 - TEMPERATURE, AIR, DEGREES CELSIUS	0.0	4.0	9.4	12.4	17.7	22.3	25.4	24.0	16.8	16.1	5.1	-2.4
# 00025 - BAROMETRIC PRESSURE (MM OF HG)	676.5	683.0	676.1	680.0	679.8	680.8	681.2	681.3	684.0	679.0	680.8	679.2
# 00032 - CLOUD COVER (PERCENT)	68.3	33.8	59.3	45.7	37.5	40.0	16.7	33.3	100.0		42.9	100.0
# 00035 - WIND SPEED (MPH)	0.0	1.3	0.7	3.8	1.2	2.4	3.3	3.7	5.0		2.0	0.0
# 00061 - DISCHARGE, INSTANTANEOUS, CUBIC FEET PER SECOND	6.4	92.5	40.6	2.7	21.2	2.8	1.5	0.6	0.8	0.8	0.8	1.0
# 00065 - GAGE HEIGHT, FEET	2.3	3.9	3.6		2.4	2.6	2.4	2.4	2.2	2.2	2.3	2.4
# 00070 - TURBIDITY (JACKSON CANDLE UNITS)	17.5	13.5	142.8	13.2	79.0	62.8	106.7	38.3	25.5	9.3	13.3	5.5
# 00095 - SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C)	2567.1	1986.2	1669.7	2855.3	2891.6	2760.5	2853.6	2383.6	2630.9	2170.0	2526.6	2836.0
# 00300 - OXYGEN DISSOLVED (MG/L)	11.5	10.9	11.1	10.4	8.3	7.5	6.2	6.7	8.1	8.9	11.0	11.7
# 00301 - OXYGEN DISSOLVED (% OF SATURATION)	85.7	82.0	97.7	103.3	87.1	84.3	72.4	85.2	90.6	87.3	91.2	91.0
# 00310 - BIOCHEMICAL OXYGEN DEMAND, 5-DAY AT 20 DEGREES CELSIUS (MG/L)	3.4	4.6	4.5	1.8	2.1	1.8	2.2	1.4	2.1	1.4	1.1	0.8
# 00400 - PH, WATER, WHOLE, FIELD, STANDARD UNITS	8.1	8.1	8.1	8.3	8.3	8.2	8.2	8.4	8.3	8.4	8.3	8.1
# 00403 - PH, WATER, WHOLE, LABORATORY, STANDARD UNITS	8.1	7.9	8.0	8.2	8.1	8.2	8.2	8.3	8.4	8.5	8.2	8.1
# 00405 - CARBON DIOXIDE DISSOLVED (MG/L AS CO2)	6.4	7.8	5.7	7.9	4.9	6.8	8.0	6.7	5.8	4.9	6.4	9.0
# 00410 - ACID NEUTRALIZING CAPACITY (ANC), CACO3	473.0	437.6	305.8	481.6	452.3	469.0	489.9	472.3	483.4	481.7	516.8	512.1
# 00440 - ACID NEUTRALIZING CAPACITY (ANC), HCO3	512.0	500.0	328.4	583.2	481.2	539.5	589.3	607.3	592.8	601.5	617.3	596.8
# 00445 - ACID NEUTRALIZING CAPACITY (ANC), CARBONATE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
# 00452 - CARBONATE, WATER, DISSOLVED, FIELD, MG/L AS CO3											0.0	
# 00600 - NITROGEN TOTAL (MG/L AS N)	1.0	0.9	1.6	0.7	1.0	1.3	0.7	0.8	0.5	0.6	0.5	0.5
# 00605 - NITROGEN ORGANIC TOTAL (MG/L AS N)	0.7	0.7	1.2	0.5	0.9	1.2	0.6	0.7	0.6	0.6	0.4	0.4
# 00608 - NITROGEN AMMONIA DISSOLVED (MG/L AS N)	0.0		0.1		0.0	0.0	0.0			0.0	0.0	
# 00610 - NITROGEN AMMONIA TOTAL (MG/L AS N)	0.1	0.1	0.2	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.0	0.1
# 00613 - NITROGEN, NITRITE, DISSOLVED, MG/L AS N	0.0		0.0		0.0	0.0	0.0			0.0	0.0	
# 00615 - NITROGEN, NITRITE, TOTAL, MG/L AS N		0.0	0.0		0.0	0.0					0.0	0.0
# 00618 - NITROGEN NITRATE DISSOLVED (MG/L AS N)	0.0					0.0	0.0			3.0		
# 00625 - NITROGEN AMMONIA PLUS ORGANIC TOTAL (MG/L AS N)	0.7	0.9	1.2	0.7	0.8	0.9	0.7	0.9	0.6	0.6	0.5	0.5
# 00630 - NITROGEN NITRITE PLUS NITRATE TOTAL (MG/L AS N)	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1
# 00631 - NITROGEN NITRITE PLUS NITRATE DISSOLVED (MG/L AS N)	0.0		0.0		0.0	0.0	0.1			1.5	0.0	
# 00650 - PHOSPHATE TOTAL (MG/L AS PO4)				0.1	0.1	0.1						
# 00665 - PHOSPHORUS TOTAL (MG/L AS P)	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
# 00666 - PHOSPHORUS DISSOLVED (MG/L AS P)				0.0								
# 00671 - PHOSPHORUS ORTHOPHOSPHATE DISSOLVED (MG/L AS P)	0.0		0.0		0.0	0.0	0.0			0.0	0.0	

Appendix D
Table 13
Monthly Averages of Water-Quality Parameters for Hanging Woman Creek, near Birney, MT.
From USGS Discrete, Non-Continuous Samples, taken from USGS, throughout the Period of 1974-1995

Parameter	January	Febuary	March	April	May	June	July	August	September	October	November	December
# 00680 - CARBON ORGANIC TOTAL (MG/L AS C)									20.0			
# 00681 - CARBON ORGANIC DISSOLVED (MG/L AS C)	5.1	13.0	9.5	9.1	7.7	7.6	10.5	11.0	11.5	9.8	6.6	5.4
# 00689 - CARBON, ORGANIC, PARTICULATE, TOTAL, MILLIGRAMS PER LITER AS C	0.4		0.5	0.4	0.8	0.2	1.0	1.0	0.6	0.6	0.4	0.1
# 00900 - HARDNESS TOTAL (MG/L AS CA03)	708.6	662.0	580.0	836.2	824.4	861.4	783.3	630.0	734.3	672.9	740.0	818.3
# 00902 - NONCARBONATE HARDNESS WATER WHOLE TOTAL, FIELD, (MG/L AS CACO3)	244.6	222.0	258.7	384.3	382.2	397.1	295.0	171.8	251.3	205.9	234.0	305.0
# 00915 - CALCIUM DISSOLVED (MG/L AS CA)	122.2	88.7	80.9	102.7	114.1	102.3	99.5	78.6	87.2	85.6	99.3	116.6
# 00925 - MAGNESIUM DISSOLVED (MG/L AS MG)	122.6	101.6	92.1	139.0	135.9	132.6	140.9	105.5	120.2	108.5	125.1	128.5
# 00930 - SODIUM DISSOLVED (MG/L AS NA)	320.2	278.8	248.6	378.7	384.7	386.2	387.3	301.2	332.5	286.2	325.0	346.0
# 00931 - SODIUM ADSORPTION RATIO	4.6	4.7	4.1	5.5	5.3	6.0	5.4	5.2	5.2	4.8	4.8	5.4
# 00932 - SODIUM, PERCENT	45.9	47.0	43.3	48.4	46.9	49.7	48.8	49.0	48.0	46.9	45.8	48.0
# 00933 - SODIUM PLUS POTASSIUM DISSOLVED (MG/L AS NA)	450.0		350.0	400.0	520.0	580.0	420.0		430.0	400.0		430.0
# 00935 - POTASSIUM DISSOLVED (MG/L AS K)	12.8	12.2	12.3	14.4	15.7	14.9	16.5	15.2	14.9	13.4	13.5	15.0
# 00940 - CHLORIDE DISSOLVED (MG/L AS CL)	16.2	11.7	11.7	13.9	15.1	15.4	26.0	12.2	13.0	10.0	12.4	12.8
# 00945 - SULFATE DISSOLVED (MG/L AS SO4)	930.0	856.4	754.5	1158.0	1163.3	1135.6	1166.4	797.5	926.2	752.5	905.7	975.5
# 00950 - FLUORIDE DISSOLVED (MG/L AS F)	1.0	0.7	0.7	0.9	1.0	0.9	1.1	1.1	1.2	1.2	1.1	1.2
# 00955 - SILICA DISSOLVED (MG/L AS SIO2)	19.0	14.7	11.9	12.7	10.7	10.6	11.0	11.2	13.5	14.5	17.9	19.7
# 01000 - ARSENIC DISSOLVED (UG/L AS AS)	1.0	1.5	1.0	1.0	1.3	1.4	1.8	2.0	2.0	1.0	1.0	1.0
# 01001 - ARSENIC SUSPENDED TOTAL (UG/L AS AS)				1.0	0.0				0.0			
# 01002 - ARSENIC TOTAL (UG/L AS AS)	2.0	4.0	1.0	1.2	1.3	2.0	3.0		1.3	1.5	1.5	2.0
# 01005 - BARIUM DISSOLVED (UG/L AS BA)											40.0	31.0
# 01010 - BERYLLIUM DISSOLVED (UG/L AS BE)	10.0	5.2	5.2	7.5	8.3	8.6	10.0	5.5	7.8	10.0	10.0	10.0
# 01011 - BERYLLIUM SUSPENDED RECOVERABLE (UG/L AS BE)				5.0	0.0				0.0			
# 01012 - BERYLLIUM TOTAL (UG/L AS BE)	10.0	10.0	10.0	10.0	8.3	10.0	10.0		6.7	10.0	10.0	10.0
# 01015 - BISMUTH DISSOLVED (UG/L AS BI)											20.0	11.0
# 01020 - BORON DISSOLVED (UG/L AS B)	291.7	221.1	200.6	275.3	283.3	303.1	310.0	282.5	318.8	360.0	292.9	292.7
# 01025 - CADMIUM DISSOLVED (UG/L AS CD)	0.0	1.5	1.2	1.0	1.0	1.1	1.2	1.0	0.5	1.0	1.0	35.0
# 01026 - CADMIUM SUSPENDED (UG/L AS CD)				0.0	0.0				0.5			
# 01027 - CADMIUM TOTAL (UG/L AS CD)	20.0	1.0	1.0	10.0	1.0	7.3	20.0		1.0	20.0	20.0	20.0
# 01030 - CHROMIUM DISSOLVED (UG/L AS CR)	0.0	15.0	6.5	7.5	2.3	3.4	2.8	15.0	10.0	20.0	3.0	20.0
# 01031 - CHROMIUM SUSPENDED (UG/L AS CR)				5.0	0.0				10.0			
# 01034 - CHROMIUM TOTAL (UG/L AS CR)	6.7	20.0	20.7	7.5	2.7	7.0	0.0		13.3	10.0	7.0	0.0
# 01035 - COBALT DISSOLVED (UG/L AS CO)											20.0	10.0

Appendix D
Table 13
Monthly Averages of Water-Quality Parameters for Hanging Woman Creek, near Birney, MT.
From USGS Discrete, Non-Continuous Samples, taken from USGS, throughout the Period of 1974-1995

Parameter	January	Febuary	March	April	May	June	July	August	September	October	November	December
# 01040 - COPPER DISSOLVED (UG/L AS CU)	0.0	2.5	2.8	0.8	1.3	1.9	1.6	3.0	1.8	2.0	2.0	3.0
# 01041 - COPPER SUSPENDED (UG/L AS CU)			3.0	4.5	5.5				1.7			
# 01042 - COPPER TOTAL (UG/L AS CU)	20.0	21.0	7.3	12.8	4.3	9.2	20.0		3.3	10.0	20.0	20.0
# 01044 - IRON SUSPENDED (UG/L AS FE)			330.0	550.0	945.0				635.0			
# 01045 - IRON, TOTAL, (UG/L AS FE)	1533.3	13000.0	2453.3	785.0	796.7	1598.3	1100.0		596.7	725.0	505.0	540.0
# 01046 - IRON DISSOLVED (UG/L AS FE)	55.0	107.8	171.1	42.0	32.0	32.4	39.1	47.2	31.2	85.5	24.4	35.0
# 01049 - LEAD DISSOLVED (UG/L AS PB)	2.0	3.0	1.2	2.8	1.0	3.1	3.4	1.5	2.0	6.5	2.5	10.0
# 01050 - LEAD SUSPENDED (UG/L AS PB)			0.0	1.0	3.5				8.5			
# 01051 - LEAD TOTAL (UG/L AS PB)	200.0	11.0	2.0	134.0	2.5	69.7	200.0		6.7	200.0	200.0	200.0
# 01054 - MANGANESE SUSPENDED (UG/L AS MN)			30.0	35.0	95.0				40.0			
# 01055 - MANGANESE TOTAL (UG/L AS MN)	86.7	470.0	193.3	167.5	128.3	158.3	130.0		56.7	40.0	40.0	80.0
# 01056 - MANGANESE DISSOLVED (UG/L AS MN)	60.0	80.5	120.0	110.0	50.0	45.4	46.0	65.0	17.8	20.0	20.0	30.0
# 01060 - MOLYBDENUM DISSOLVED (UG/L AS MO)	3.0	4.0		4.0		2.0	3.0			4.0	4.0	4.0
# 01062 - MOLYBDENUM TOTAL (UG/L AS MO)	1.7			4.0		3.0	2.0			3.5	3.0	3.0
# 01065 - NICKEL DISSOLVED (UG/L AS NI)	6.0	3.5	3.2	2.8	2.5	2.4	2.8	7.0	2.2	3.0	2.5	8.0
# 01066 - NICKEL SUSPENDED (UG/L AS NI)				6.0	3.5				5.7			
# 01067 - NICKEL TOTAL (UG/L AS NI)	33.3	14.0	7.7	28.8	4.0	21.5	50.0		7.7	25.0	50.0	50.0
# 01075 - SILVER DISSOLVED (UG/L AS AG)											2.0	2.0
# 01080 - STRONTIUM DISSOLVED (UG/L AS SR)											1300.0	1400.0
# 01085 - VANADIUM DISSOLVED (UG/L AS V)	0.4	0.0		0.6		0.0	0.0			1.1	0.9	5.0
# 01090 - ZINC DISSOLVED (UG/L AS ZN)	20.0	13.0	7.8	22.5	11.7	10.7	14.0	16.0	16.2	20.0	20.0	20.0
# 01091 - ZINC SUSPENDED (UG/L AS ZN)				30.0	15.0				10.0			
# 01092 - ZINC TOTAL (UG/L AS ZN)	30.0	100.0	23.3	56.7	20.0	18.3	20.0		23.3	20.0	20.0	
# 01100 - TIN DISSOLVED (UG/L AS SN)											20.0	10.0
# 01105 - ALUMINUM, TOTAL (UG/L AS AL)	150.0			260.0		1370.0	560.0			200.0	135.0	
# 01106 - ALUMINUM DISSOLVED (UG/L AS AL)	100.0	100.0		65.0		20.0	100.0			70.0	100.0	40.0
# 01120 - GALLIUM DISSOLVED (UG/L AS GA)											10.0	5.0
# 01125 - GERMANIUM DISSOLVED (UG/L AS GE)											20.0	10.0
# 01130 - LITHIUM DISSOLVED (UG/L AS LI)	100.0	110.0		105.0		50.0	120.0			95.0	90.0	100.0
# 01132 - LITHIUM TOTAL (UG/L AS LI)	73.3			95.0		75.0	120.0			95.0	100.0	80.0
# 01145 - SELENIUM DISSOLVED (UG/L AS SE)	1.0	1.0	1.0	0.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
# 01146 - SELENIUM SUSPENDED (UG/L AS SE)				0.0	0.0				0.0			
# 01147 - SELENIUM TOTAL (UG/L AS SE)	1.3	1.0	1.0	0.8	1.0	1.0	1.0		1.0	1.0	1.0	1.0
# 01150 - TITANIUM DISSOLVED (UG/L AS TI)											20.0	8.0

Appendix D
Table 13
Monthly Averages of Water-Quality Parameters for Hanging Woman Creek, near Birney, MT.
From USGS Discrete, Non-Continuous Samples, taken from USGS, throughout the Period of 1974-1995

Parameter	January	Febuary	March	April	May	June	July	August	September	October	November	December
# 01160 - ZIRCONIUM DISSOLVED (UG/L AS ZR)											20.0	25.0
# 70300 - SOLIDS, RESIDUE ON EVAPORATION AT 180 DEG C, DISSOLVED (MG/L)				2190.0								
# 70301 - SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	1679.1	1591.2	1375.0	2118.8	1971.1	2221.4	1960.0	1539.0	1798.6	1568.6	1728.0	1966.7
# 70302 - SOLIDS, DISSOLVED (TONS PER DAY)	21.0	14.5	32.1	21.6	130.8	28.6	12.9	4.7	4.6	4.5	6.5	9.5
# 70303 - SOLIDS, DISSOLVED (TONS PER ACRE-FOOT)	2.3	2.2	1.9	2.9	2.7	3.0	2.7	2.1	2.4	2.1	2.3	2.7
# 70331 - SEDIMENT, SUSPENDED, SIEVE DIAMETER, PERCENT FINER THAN .062 MM	60.2	71.2	83.2	64.4	90.3	82.2	83.1	95.2	81.7	69.0	70.2	51.0
# 70507 - PHOSPHORUS ORTHOPHOSPHATE, TOTAL (MG/L AS P)		0.0	0.0		0.0	0.0					0.0	0.0
# 71845 - NITROGEN, AMMONIA, TOTAL (MG/L AS NH4)	0.0	0.0	0.1	0.0	0.0	0.0	0.0		0.0	0.0	0.1	0.0
# 71865 - IODIDE, DISSOLVED (MG/L AS I)			0.0	0.0			0.0		0.0	0.0	0.0	
# 71870 - BROMIDE, DISSOLVED (MG/L AS BR)			0.1	0.1			0.1		0.0	0.0	0.9	
# 71886 - PHOSPHORUS TOTAL (MG/L AS PO4)	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
# 71887 - NITROGEN, TOTAL (MG/L AS NO3)	4.6	3.9	7.0	3.1	4.2	5.8	3.0	3.5	2.4	2.8	2.4	2.4
# 71890 - MERCURY, DISSOLVED (UG/L AS HG)	0.5	0.1	0.2	0.2	0.2	0.2	0.2	0.4	0.1	0.3	0.5	0.1
# 71895 - MERCURY, SUSPENDED HG)RECOVERABLE (UG/L AS HG)				0.0	0.0				0.1			
# 71900 - MERCURY, TOTAL RECOVERABLE (UG/L AS HG)	0.5	0.1	0.1	0.3	0.1	0.3	0.5		0.2	0.5	0.5	0.1
# 80154 - SEDIMENT, SUSPENDED CONCENTRATION (MG/L)	65.5	103.7	107.9	65.7	118.5	123.7	151.5	106.5	72.1	52.5	52.1	58.2
# 80155 - SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY)	2.4	0.3	21.2	0.4	61.6	1.9	2.2	0.4	0.2	0.1	0.1	0.2
# 82068 - POTASSIUM 40 DISSOLVED(PCI /L AS K40)	9.7	9.7		9.7	12.0	0.7				10.0	0.3	
# 90095 - SPECIFIC CONDUCTANCE MICROSIEMENS/CM AT 25 DEG C	2652.9	2238.8	2016.7	2756.7	2888.8	2628.0	2931.7	2048.0	2165.0	1906.7	2443.0	2494.0
# 90410 - ACID NEUTRALIZING CAPACITY (ANC), CACO3	573.9	358.8	378.2	470.4	468.9	449.6	499.0	424.8	478.5	492.3	529.0	577.0
# 95902 - HARDNESS, NONCARBONATE, AS CACO3, MG/L	140.0		96.0	155.0	295.0	210.0	120.0	31.0	63.0	0.0		230.0

Appendix D
Table 14
Monthly Averages of Water-Quality for Prairie Dog Creek, near Birney, MT.
From USGS Discrete, Non-Continuous Samples, taken at USGS Gauge 6307528, throughout the Period 1978-1983

Parameter	January	Febuary	March	April	May	June	July	August	September	October	November	December
# 00010 - TEMPERATURE, WATER (DEG. C)		0.8		13.0	16.8	19.4	21.9	16.0	13.5			0.0
# 00020 - TEMPERATURE, AIR, DEGREES CELSIUS		9.8		17.5	6.0	23.2	27.5	21.5				2.5
# 00025 - BAROMETRIC PRESSURE (MM OF HG)						670.0						
# 00032 - CLOUD COVER (PERCENT)						50.0						
# 00035 - WIND SPEED (MPH)						5.0						
# 00061 - DISCHARGE, INSTANTANEOUS, CUBIC FEET PER SECOND		2.2		1.6	4.7	0.8	0.4	0.2	0.1			0.1
# 00070 - TURBIDITY (JACKSON CANDLE UNITS)									25.0			
# 00095 - SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C)		297.0		1220.0	1320.0	995.0	1600.0	1720.0	1120.0			1860.0
# 00300 - OXYGEN DISSOLVED (MG/L)		10.7		5.5	12.0	5.8	4.4	8.4				3.7
# 00301 - OXYGEN DISSOLVED (% OF SATURATION)		89.0		59.0	122.0	73.0	62.0	95.5				28.0
# 00310 - BIOCHEMICAL OXYGEN DEMAND, 5-DAY AT 20 DEGREES CELSIUS (MG/L)				0.6			0.6		1.7			
# 00400 - PH, WATER, WHOLE, FIELD, STANDARD UNITS		8.2		8.2	8.7	8.3	9.2	8.6	8.3			8.0
# 00403 - PH, WATER, WHOLE, LABORATORY, STANDARD UNITS						7.4						
# 00405 - CARBON DIOXIDE DISSOLVED (MG/L AS CO2)									2.9			
# 00410 - ACID NEUTRALIZING CAPACITY (ANC),CACO3		80.5		365.0		350.0	350.0	410.0	300.0			380.0
# 00440 - ACID NEUTRALIZING CAPACITY (ANC), HCO3									360.0			
# 00445 - ACID NEUTRALIZING CAPACITY (ANC), WATER CARBONATE									0.0			
# 00600 - NITROGEN TOTAL (MG/L AS N)		2.1		0.7	0.5	0.4	0.5	0.3	0.6			0.6
# 00605 - NITROGEN ORGANIC TOTAL (MG/L AS N)		1.9		0.5	0.4	0.3	0.5	0.3	0.6			0.3
# 00610 - NITROGEN AMMONIA TOTAL (MG/L AS N)		0.0		0.0	0.0	0.2	0.0	0.0	0.0			0.0
# 00625 - NITROGEN AMMONIA PLUS ORGANIC TOTAL (MG/L AS N)		1.9		0.5	0.4	2.8	0.5	0.3	0.6			0.3
# 00630 - NITROGEN NITRITE PLUS NITRATE TOTAL (MG/L AS N)		0.2		0.1	0.1	0.7	0.0	0.1	0.0			0.3
# 00650 - PHOSPHATE TOTAL (MG/L AS PO4)				0.1		0.1	0.1					
# 00665 - PHOSPHORUS TOTAL (MG/L AS P)		0.2		0.0	0.0	0.3	0.0	0.0	0.0			0.0
# 00680 - CARBON ORGANIC TOTAL (MG/L AS C)												5.5
# 00681 - CARBON ORGANIC DISSOLVED (MG/L AS C)		51.0		6.7		7.8	8.3					5.3
# 00689 - CARBON, ORGANIC, PARTICULATE, TOTAL, MILLIGRAMS PER LITER		2.8				0.5	0.7					0.0
# 00900 - HARDNESS TOTAL (MG/L AS CA03)		170.0		660.0	750.0	730.0	760.0	820.0	550.0			940.0
# 00902 - NONCARBONATE HARDNESS WATER WHOLE TOTAL, FIELD, (MG/L AS CACO3)		72.0		295.0		380.0	410.0	410.0	260.0			560.0
# 00915 - CALCIUM DISSOLVED (MG/L AS CA)		26.0		77.5	85.0	67.0	42.0	50.0	69.0			78.0
# 00925 - MAGNESIUM DISSOLVED (MG/L AS MG)		26.0		112.5	130.0	80.0	160.0	170.0	92.0			180.0
# 00930 - SODIUM DISSOLVED (MG/L AS NA)		12.0		57.5	65.0	47.0	100.0	120.0	59.0			110.0

Appendix D
Table 14
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From USGS Discrete, Non-Continuous Samples, taken at USGS Gauge 6307528, throughout the Period 1978-1983

Parameter	January	Febuary	March	April	May	June	July	August	September	October	November	December
# 00931 - SODIUM ADSORPTION RATIO		0.4		1.0	1.0	1.2	1.6	1.8	1.1			1.6
# 00932 - SODIUM, PERCENT		12.0		16.0	16.0	18.0	22.0	24.0	19.0			20.0
# 00933 - SODIUM PLUS POTASSIUM DISSOLVED (MG/L AS NA)		23.0			71.0	81.0	110.0	130.0				
# 00935 - POTASSIUM DISSOLVED (MG/L AS K)		11.0		5.9	5.5	8.4	9.3	9.1	10.0			9.0
# 00940 - CHLORIDE DISSOLVED (MG/L AS CL)		4.0		5.3	5.4	5.0	7.5	9.0	6.4			8.4
# 00945 - SULFATE DISSOLVED (MG/L AS SO4)		100.0		390.0	460.0	370.0	640.0	730.0	370.0			750.0
# 00950 - FLUORIDE DISSOLVED (MG/L AS F)		0.1		0.4	0.3	0.4	0.5	0.5	0.3			0.3
# 00955 - SILICA DISSOLVED (MG/L AS SIO2)		9.4		7.4	6.8	5.2	1.9	4.5	8.9			14.0
# 01000 - ARSENIC DISSOLVED (UG/L AS AS)							2.0		1.0			
# 01002 - ARSENIC TOTAL (UG/L AS AS)							1.0					
# 01010 - BERYLLIUM DISSOLVED (UG/L AS BE)							1.0		10.0			
# 01011 - BERYLLIUM SUSPENDED RECOVERABLE (UG/L AS BE)							0.0					
# 01012 - BERYLLIUM TOTAL (UG/L AS BE)							10.0					
# 01020 - BORON DISSOLVED (UG/L AS B)		190.0		90.0	90.0	85.0	190.0	150.0	90.0			140.0
# 01025 - CADMIUM DISSOLVED (UG/L AS CD)							3.0		0.0			
# 01026 - CADMIUM SUSPENDED (UG/L AS CD)							0.0					
# 01027 - CADMIUM TOTAL (UG/L AS CD)							0.0					
# 01030 - CHROMIUM DISSOLVED (UG/L AS CR)							0.0		0.0			
# 01031 - CHROMIUM SUSPENDED (UG/L AS CR)							10.0					
# 01034 - CHROMIUM TOTAL (UG/L AS CR)							20.0					
# 01040 - COPPER DISSOLVED (UG/L AS CU)							2.0		3.0			
# 01041 - COPPER SUSPENDED (UG/L AS CU)							2.0					
# 01042 - COPPER TOTAL (UG/L AS CU)							3.0					
# 01044 - IRON SUSPENDED (UG/L AS FE)							40.0					
# 01045 - IRON, TOTAL, (UG/L AS FE)							50.0					
# 01046 - IRON DISSOLVED (UG/L AS FE)		160.0		495.0	10.0	16.5	10.0	10.0	30.0			10.0
# 01049 - LEAD DISSOLVED (UG/L AS PB)							0.0		0.0			
# 01050 - LEAD SUSPENDED (UG/L AS PB)							17.0					
# 01051 - LEAD TOTAL (UG/L AS PB)							17.0					
# 01054 - MANGANESE SUSPENDED (UG/L AS MN)							6.0					
# 01055 - MANGANESE TOTAL (UG/L AS MN)							10.0					
# 01056 - MANGANESE DISSOLVED (UG/L AS MN)							4.0		20.0			
# 01060 - MOLYBDENUM DISSOLVED (UG/L AS MO)									2.0			
# 01065 - NICKEL DISSOLVED (UG/L AS NI)							2.0		0.0			

Appendix D
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Parameter	January	Febuary	March	April	May	June	July	August	September	October	November	December
# 01066 - NICKEL SUSPENDED (UG/L AS NI)							6.0					
# 01067 - NICKEL TOTAL (UG/L AS NI)							8.0					
# 01085 - VANADIUM DISSOLVED (UG/L AS V)									0.4			
# 01090 - ZINC DISSOLVED (UG/L AS ZN)							6.0		20.0			
# 01091 - ZINC SUSPENDED (UG/L AS ZN)							4.0					
# 01092 - ZINC TOTAL (UG/L AS ZN)							20.0					
# 01106 - ALUMINUM DISSOLVED (UG/L AS AL)									10.0			
# 01130 - LITHIUM DISSOLVED (UG/L AS LI)									70.0			
# 01145 - SELENIUM DISSOLVED (UG/L AS SE)							2.0		1.0			
# 01146 - SELENIUM SUSPENDED (UG/L AS SE)							0.0					
# 01147 - SELENIUM TOTAL (UG/L AS SE)							2.0					
# 70301 - SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)		249.0		876.5		1020.0	1170.0	1340.0	793.0			1380.0
# 70302 - SOLIDS, DISSOLVED (TONS PER DAY)		1.1		4.0		3.0	1.2	0.4	1.1			0.3
# 70303 - SOLIDS, DISSOLVED (TONS PER ACRE-FOOT)		0.3		1.2		1.4	1.6	1.8	1.1			1.9
# 70331 - SEDIMENT, SUSPENDED, SIEVE DIAMETER, PERCENT FINER THAN .062 MM		96.8			100.0	98.0						
# 71845 - NITROGEN, AMMONIA, TOTAL (MG/L AS NH4)		0.0		0.0	0.0	0.0	0.0	0.0				
# 71865 - IODIDE, DISSOLVED (MG/L AS I)		0.0				0.0	0.0					
# 71870 - BROMIDE, DISSOLVED (MG/L AS BR)		0.1				0.0	0.1					
# 71886 - PHOSPHORUS TOTAL (MG/L AS PO4)		0.8		0.1	0.0	0.8	0.1	0.1				
# 71887 - NITROGEN, TOTAL (MG/L AS NO3)		9.4		3.0	2.3	1.7	2.2	1.3	2.7			2.5
# 71890 - MERCURY, DISSOLVED (UG/L AS HG)							0.1		0.2			
# 71895 - MERCURY, SUSPENDED HG)RECOVERABLE (UG/L AS HG)							0.0					
# 71900 - MERCURY, TOTAL RECOVERABLE (UG/L AS HG)							0.1					
# 80154 - SEDIMENT, SUSPENDED CONCENTRATION (MG/L)		175.5		173.0	287.0	94.7	29.8	85.3	31.3			82.0
# 80155 - SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY)		0.2		0.9	10.1	0.1	0.0	0.0	0.0			0.0
# 90095 - SPECIFIC CONDUCTANCE MICROSIEMENS/CM AT 25 DEG C						612.0						
# 90410 - ACID NEUTRALIZING CAPACITY (ANC), CACO3						65.0						

Appendix D
Table 15
Monthly Averages of Water-Quality Parameters for Rosebud Creek near Kirby, MT.
From USGS Discrete, Non-Continuous Samples taken at USGS Gage 6295100, throughout the Period 1982-1988

Parameter	January	Febuary	March	April	May	June	July	August	September	October	November	December
# 00010 - TEMPERATURE, WATER (DEG. C)		0.0	2.3	11.7	10.5	14.3						0.0
# 00020 - TEMPERATURE, AIR, DEGREES CELSIUS		6.0	9.0	21.7	15.7	18.3						3.0
# 00061 - DISCHARGE, INSTANTANEOUS, CUBIC FEET PER SECOND		2.5	6.5	6.2	4.6	0.3						0.1
# 00095 - SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C)		955.0	993.7	1032.7	1106.7	1146.7						1340.0